Measuring Waste Reduction

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Picking an easy, simple method of measuring your reductions in waste generation is as important as choosing the appropriate waste reduction techniques. An overall facility mass balance as described below may be the best assessment method.

The waste (W) is calculated by subtracting the total period product and by-product (P) mass from the raw material mass (M).

$$W = M - P$$

The percent waste is calculated by dividing by the raw material.

$$\%W = ((M - P) / M) \times 100$$

The mass balance method is for overall production and operations at a facility but could easily be adapted to the specific waste stream level:

Definitions

product - mass of the primary items or materials the facility is in business to produce.

by-product - mass of any revenue producing items or materials other than a product.

waste - anything leaving the facility's boundaries in any media (air, water, solid, or energy) that is not a product or by-product. ***If it's not a product, it's a waste!***

raw material - mass of any item or material (including packaging) entering the facility's boundaries in any media.

labor - facility personnel; assume that they enter and leave the facility unchanged. Do not include.

- The total period raw material and total period product and by-product should be easy for most companies to determine.
- It is recognized that there is some storage potential in the facility, but over the long term this will have a minimal effect on the results.
- A decrease in the percent waste is an improvement in source reduction.
- This method of measurement should be integral to and documented in your facility Waste Reduction Plan.